BY ORDER OF THE COMMANDER
AIR FORCE MATERIEL COMMAND

AFMC PAMPHLET 65-1

5 JUNE 1996

Financial Management

COST & PLANNING FACTORS

OPR: HQ AFMC/FMCI
(Mr Frederick M. Finney)

Certified by: HQ AFMC/FMC (Mr Eugene Nowak)

Supersedes AFMCP 173-10, 30 May 86

Pages: 15
Distribution: F

This pamphlet explains the cost factors commonly used by Air Force Materiel Command Cost Analysts. These rates are used by Depot Maintenance activities and the Air Force Industrial Fund and its customers in preparing cost studies and appropriation estimates. Sales prices/rates are developed for aircraft by mission design, depot field teams, engines, missiles, and other major end items, software, exchangeables, shipping and transportation and civilian personnel costs. The Depot Maintenance Sales/Price factors that this pamphlet applies to are for Sacramento Air Logistics Center (SM), Ogden Air Logistics Center (OO), San Antonio Air Logistics Center (SA), Warner Robins Air Logistics Center (WR) and Oklahoma City Air Logistics Center (OC). Rate Tables are maintained by HQ AFMC/FMCI, 4375 Chidlaw Road, Suite 6, Wright-Patterson AFB, Ohio 45433. DSN 787-3927. Commercial: (513) 257-3927.

SUMMARY OF REVISIONS

This revision excludes actual labor hour rates and factors and “contract sensitive” data.

Chapter 1

DEPOT MAINTENANCE

1.1. Terms Explained:

1.1.1. Depot Maintenance is done through the Depot Maintenance Business Area of the Defense Business Operations Fund (DBOF) and provides for repairing, modifying, overhauling, reclaiming, or rebuilding parts, assemblies, subassemblies, components, and end items; the emergency manufacturing of nonavailable parts; and for providing technical assistance to using activities and intermediate activities.

1.1.2. Depot Maintenance is done by designated maintenance activities to augment stocks of serviceable material and to support organizational and intermediate maintenance activities. Depot maintenance activities are those who have use of more extensive facilities, equipment, and personnel of a higher technical skill than are normally available at lower levels of maintenance.

1.2. Sales Prices/Rates:

1.2.1. Depot Maintenance Business Area (DMBA) sales prices have three primary purposes. Sales prices generate revenue for the DMBA as work for customers is completed. Secondly, DMBA customers use our prices to project the dollars needed in their budget submission to Congress for appropriated dollars. Finally, sales prices represent the management plan of what it costs to accomplish specific workloads budget leadtime away. The DMBA budget is the beginning point of the process of building the DMBA sales price. All costs must be identified and considered in building the sales price in order for DMBA to replenish funds.

1.2.2. The DMBA has two primary methods for replenishing funds. One method is through the End Item Sales Price (EISP). The EISP is a fixed price per unit of production and is computed by multiplying labor standards by RCC labor and overhead rates and adding the standard cost of material. A second method is through hourly (depot) sales rates. Hourly sales rates are based on labor standards, labor rates, overhead rates, and material costs at a different level of aggregation than an end item.

1.2.3. Sales prices and rates are developed two years prior to the fiscal year for which they are in effect. Sales prices represent negotiated contracts stabilized in accordance with the DoD Rate stabilization policy. These prices are DoD approved and are the prices charged industrial fund customers for production and services. Sales prices cannot be changed in the year of execution without prior DoD approval. The DMBA experiences profits and losses to the fund from year-to-year; however, over the long-term DMBA breaks even. Excess profits are rebated to the customer in future years through lower rates. Excess losses are passed back to the customer in future years through increased sales rates.

1.3. Examples of work categories are:

1.3.1. Mission Design : The aircraft type, or "tail number"(example, F-16) or missile type.

1.3.2. Depot Field Team. A team sent TDY to perform depot level modification or repair work at a field unit.

1.3.3. Other Major End Item (OMEI): Repair of serialized items, vehicles, ground power generators, guidance systems, or other equipment.

1.3.4. Exchangeable: Repairable items such as fuel pumps, electric motors and carburetors (or other fuel injection systems) which are removed from a weapon system and replaced with a serviceable item.

1.3.5. Cost Elements Defined:

1.3.6. Direct Product Standard Hour : The elements of costs developed for each category of repair are expressed in rates per direct product standard hour (DPSH). A DPSH assumes a qualified worker, working at a pace ordinarily used, the worker under capable supervision, experiencing normal fatigue and delays with the standard use of existing resources to do a defined amount of work of a specified quality when following a prescribed method.

1.3.7. Direct Product Actual Hour (DPAH): The direct product actual hour rate is derived by applying the efficiency rate to the DPSH rate.

Cost elements for both elements are direct labor, direct material, other costs, and general and administrative (G&A) costs .

1.3.7.1. Direct Labor: The rate for labor that can be tied directly to a product, service, or customer and work that is supported by prescribed work authorization documents indicating the specific nature of the work to be done.

1.3.7.2. Direct Material: The costs for material which enters and becomes directly a part of a product and can be related to specific end items, or components, or material that can be readily measured and charged to a specific job or end product.

1.3.7.3. Other Costs: Included in this element are the following:

1.3.7.3.1. Other direct: All other direct costs, including personnel on temporary duty (TDY), contract maintenance work done in direct support of organic production and material purchased on site bought by the host base.

1.3.7.3.2. Operations overhead: Costs incurred by, or allocated to a Resource Cost Center but which cannot be identified to specific job orders. These costs include indirect labor, indirect material, other indirect costs, and shop support expenses for section supervision, scheduling, planning, engineering, quality, and division direction. Indirect labor includes leave, training, security meetings, and other costs.

1.3.7.4. General and Administrative (G&A): All Depot Maintenance Industrial Fund (DMIF) management and administrative costs, except allocated quality control, and all DMIF material and other expenses not classified as direct or operations overhead. Includes support provided to product directorates by base support functions such as civilian personnel, base vehicle support, fire protection and security services.

Depot Maintenance Sales Prices Cost Format

Aircraft ALC Direct Labor Direct Material G&A TOTAL DPSH TOTAL DPAH

Table 1.1. Aircraft and ALC.

A-7	SM
A-10	SM
B-1	OC

B-52	OC
B-52G	SA
B-52H	SA
C-5	SA
C-130	OO
C-130	WR
C-135	OC
C-141	WR
E-3	OC
EF111	SM
F-4	OO
F-15	SM
F-15	WR

Aircraft	ALC	Direct Labor	Direct Material	G&A	TOTAL DPSH	TOTAL DPAH

Table 1.2. Aircraft and ALC Continued.

F-16	OO
F-111	SM
FB-111	SM
OV-10	OO
T-37	SM

Depot Field Team Cost Format:

ALC	Direct Labor	Direct Material	G&A	TOTAL DPSH	TOTAL DPAH
OC					
OO					
SA					
SM					
WR					

Engines Cost Format:

ALC	Direct Labor	Direct Material	G&A	TOTAL DPSH	TOTAL DPAH
OC					
SA					

Missiles Cost Format:

ALC	Direct Labor	Direct Material	G&A	TOTAL DPSH	TOTAL DPAH
OO					

Rivet Mile Cost Format:

ALC	Direct Labor	Direct Material	G&A	TOTAL DPSH	TOTAL DPAH
OO					

Peacekeeper Cost Format:

OO

OMEI Cost Format:

ALC	Direct Labor	Direct Material	G&A	TOTAL DPSH	TOTAL DPAH
OO					
SM					
SM (for OO)					

Other Cost Format:

ALC	Direct Labor	Direct Material	G&A	TOTAL DPSH	TOTAL DPAH
OC					
OO					
SA					
SM					
WR					

Local Manufacturing Cost Format:

ALC	Direct Labor	Direct Material	G&A	TOTAL DPSH	TOTAL DPAH
OC					
OO					
SA					
SM					
WR					

Software Cost Format:

ALC	Direct Labor	Direct Material	G&A	TOTAL DPSH	TOTAL DPAH
OC					
OO					
SA					
SM					
WR					

Exchangeables Cost Format:

ALC for	ALC	Direct Labor	Direct Material	G&A	TOTAL DPSH	TOTAL DPAH
OC	OC					
	OO					
	SA					
	SM					
	WR					
OO	OC					
	OO					

Exchangeables Cost Format: (Continued)

ALC for	ALC	Direct Labor	Direct Material	G&A	TOTAL DPSH	TOTAL DPAH
	SA					
	SM					
	WR					
SA	OC					
	OO					
	SA					
	SM					
	WR					
SM	OC					
	OO					
	SA					
	SM					
	WR					
WR	OC					
	OO					
	SA					
	SM					
	WR					

1.4. AGMC has only one exchangeable rate and it applies to all centers. Rates for Depot Field Teams, Engines, Other and Exchangeables are planning rates. Actual rate charged will depend on specific job requirements, TDY site and travel, and other costs.

Chapter 2

BASE LEVEL MAINTENANCE

2.1. Terms Explained:

2.1.1. Base Level Maintenance: Base level maintenance is done by organizational and intermediate maintenance activities. It involves primarily the physical functions of equipment maintenance and related functions. These functions include servicing, repairing, testing, overhauling, modifying, calibrating, configuring, and inspecting.

The Cost Format for Base Level Maintenance is:

2.1.2. Aircraft/MD:Labor + Material + Other = Total Base Maintenance Rates are based on the total of direct labor, material and other costs by Mission Design (MD). The cost factors are derived from VAMOSC Reports and the Maintenance Reports managed by AFMC/ENIS.

2.1.3. Direct Labor: The rate for labor that can be tied directly to a product, service, or customer, and work that is supported by prescribed work authorization documents indicating the specific nature of work to be done.

2.1.4. Material: The cost for material which enters and becomes directly a part of a product and can be related to specific end items, or components, or material that can be readily measured and charged to a specific job or end product. Costs for contractor maintenance and government furnished material are included.

2.1.5.Other Costs: Included in this element are the following:

Other direct: All other direct costs, including personnel on TDY for direct workers, contract maintenance work done in direct support of organic production, and material purchased on site but bought by the host base. Other costs at base level are distributed to the MD on the basis of direct labor hours at base level.

Operations overhead: Costs incurred by or allocated to Resource Cost Center but cannot be identified to job orders. These costs include indirect labor, indirect material, other indirect costs and shop support expenses for section direction, scheduling and planning, engineering, quality, and division direction. Indirect labor includes leave, training, security meetings, and other costs. Indirect material is material that cannot clearly be identified to an end item.

Chapter 3

REPAIR CYCLES

3.1. Terms Explained:

3.1.1. Depot Repair Cycle Development: Depot Repair Cycle is the time span in calendar days that begins with the removable of an unserviceable item and ends when the item is made serviceable and available for use. Standard depot and base repair cycles are developed annually for items designated in the expendability, recoverability, repairability category (ERRC). These standard times are based on the average estimated times available in the Recoverable Consumption Item requirements System (D041).

Depot Repair Cycle includes the following:

3.1.1.1. Base processing days: The time span from the removal of the item to shipment to the source of requisition (SOR).

3.1.1.2. Reparable intransit days: The time span covering shipment from base supply to receipt by the SOR.

3.1.1.3. Supply to maintenance days: The time span from receipt of the unserviceable asset in depot supply to initiation of order and receipt by the maintenance shop.

3.1.1.4. Shop flow days: The number of calendar days required to repair an item from date of reparable input for repair to the date of serviceable output.

3.1.1.5. Serviceable turn-in time: Intransit time applicable to the processing of serviceable items from the SOR to supply.

Computation of Standard Depot Repair Cycle Time

Table 3.1. Organic.

	Organic			
	CONUS		OVERSEAS	
	100% NRTS	Less Than 100% NRTS	100% NRTS	Less Than 100% NRTS
Base processing days	2	5	2	5
Repairable Intransit days	11	11	30	30
Supply to Maintenance days	0	0	0	0
Serviceable turn-in time	1	1	1	1
Total	14	17	33	36

Table 3.2. Contract.

	Contract	
	100% NRTS	Less Than 100% NRTS
Base processing days	2	5

Repairable Intransit days	14	14
Supply Flow Days	30	30
Supply to Maintenance days	0	0
Serviceable turn-in time	15	15
Total	61	64

3.1.1.5.1. Note: NRTS means not repairable this station, requiring that attempts to repair must be made at depot.

3.2. Base Repair Cycle: The Base Repair Cycle is the time span expressed in calendar days, from the time an unserviceable item is removed from use until the time it is made serviceable in base maintenance. Repair cycle time varies by item and is recorded and reported by the History Accumulation Subsystem (D143F).

Chapter 4

LOGISTICS DATA AND OTHER COSTS

4.1. Logistics Data includes Item Management Cost, Item Entry Cost, Annual Item Management Cost, Base Supply Management Cost, Technical Data Costs, Package and Shipping Costs, and other costs associated with the maintenance process.

4.1.1. Item Management Cost: The cost associated with the establishment of an item into the Air Force Inventory.

4.1.2. Item Entry Cost: The item entry cost is the administrative cost (by DR, FM, and the Cataloging and Standardization Center, (CASC) to initially catalog an item into the Air Force inventory.

4.1.3. Annual Item Management Cost: The cost to manage the cataloged record and to stock, store , and issue the item, either in part, or assembly for a period of 1 year.

4.1.4. Base Supply Management Cost: The cost of managing an item in the Base Supply system for a period of 1 year. The source of the data is the USAF Standard Base Supply System (D002A).

4.1.5. Technical Data Costs: The cost required to define the design and to produce, support, maintain or operate systems and equipment. May include graphic or pictorial representations, including engineering drawing, indexing lists, specifications, standards, technical manuals, item descriptions, and related information.

4.1.6. Technical Data Acquisition Cost: The cost for writing, editing, preparing reproducible copy, and printing technical data. This cost is included in the cost for the equipment to which it relates.

4.1.7. Technical Order Update Cost: The cost of preparing a master reproducible copy for revision of existing technical data. A reproducible copy is a hard copy, negative, paper master, computer disk, or other with software that may contain files with data or any other media from which technical data are reproduced.

4.1.8. Reproduction Costs: The cost of copying or duplicating technical data from reproducible copy. This cost includes the cost of reproducible masters, plates, computer disk, or other with software that may contain files with data, or any other media from which technical data are reproduced.

4.1.9. Packaging Cost: The direct labor and direct material cost associated with preparing material for shipment. The ratio of package item weight to unpacked item weight is also presented.

The difference for CONUS and overseas cost is insignificant. Cost elements and weight elements are defined as follows:

4.1.9.1. Packaging Material Cost: The costs of preservation, barriers, containers, cushioning and dunnage used to protect items during transportation and storage.

4.1.9.2. Packaging-Labor Costs: The wage paid to fabricates, assemble, and apply protective shipping and storage measures up to, but not including shipment processing.

4.1.9.3. Unpacked Item Weight: The bare weight of the unpacked, unloaded, or item without fuel.

4.1.9.4. Packaged Item Weight: The combined weight of the unpacked item and the weight of all packaging material required for shipment and storage.

4.1.9.5. Average Packaging Cost per pound Factor: The average packaging material and labor cost per pound to prepare an unpacked item for shipment and storage.

Average Package Cost/Pound $3.00

Packaged Weight/Item Factor 1.941

Shipment Data for Costs includes :

4.1.9.5.1. Order and Shipping Time: Order and Shipping Time is the time interval in days between the initiation of stock replenishment action and the receipt of the material. Requisition processing and material movement standards are prescribed by DoD 4410.6, Uniform Material Movement and Issue Priority System (UMMIPS). These time standards are appropriate for estimating order and shipping time.

4.1.9.5.2. Time Standards: Time standards are reported in days by priority designator.

4.1.9.5.3. Priority Designator: The Priority Designator is based on a combination of factors which identify the mission of the requisitioner or the intended recipient and urgency of need, or end use:

Priority designators 01; 08; are used for immediate end-use requirements.

Priority designators 09 -15; are used for stock replenishment requirements.

4.1.9.5.4. Technical Data: Technical Order Update cost includes computer disks or other computer storage media and software that may contain files with data; Reproduction Costs. The cost of copying or duplicating technical data from computer disk, or other with software that may contain files with data, or any other media from which technical data are reproduced; Average base pay is computed using base pay scales for the latest year available. The pay scales used are the average of the general schedule (GS), wage grade (WG), wage leader (WL) or wage supervisor (WS) for the specific Air Logistics Center (Depot). The average grade levels differ among the Air Logistics Centers. The base pay scale will differ among the Air Logistics Centers because of the 1994 Percentage Salary Adjustments by Geographic Locality; the pay scales are not published in this pamphlet; The average pay grades and average base pay rates may be obtained from the Advanced Personnel Data System-Civilian (APDS-C), E300. The rules on severance pay are also subject to the current congressional actions (so-called "buy-outs") and OPM directives and the policies and directives of the specific federal agency.

Chapter 5

CIVILIAN PERSONNEL COSTS

5.1. Civilian personnel costs include the total cost of permanent change of station (PCS), base pay, and costs of employment benefits.

5.2. Permanent Change of Station (PCS): There are many variables involved in estimating costs of a PCS. The PCS section of personnel at base level can be of assistance in estimating these costs. The DoD Joint Travel Regulation (JTR) is the prescribing directive.

The following is a sample computation of a PCS computation made by the PCS Section of the 88 MSSX/ MSCEB, Wright-Patterson AFB, Ohio. The sample is PCS from Peterson Field, Colorado to Wright-Patterson AFB, Ohio.

Sample Computation

Assumptions:

1. Family of four, employee and three dependents.

2. Value of real estate, $90,000.

3. Household goods, total 13,500 pounds, with maximum weight of 18,000 pounds.

4. Moving distance, 1,200 miles.

5. Each family member will require temporary storage for 60 days.

6. Storage of household goods for 90 days.

7. New station, Wright-Patterson AFB, Ohio.

8. Old station, Peterson Field, Colorado.

Real Estate Disposition/Acquisition (computed at maximum reimbursement)

Sale of property (10%, up to $18,526) = $90,000 x .10 = $9,000

Purchase of new property (5% up to $9,263) = $90,000 x .05 = $4,500.

Total Real Estate Disposition/Acquisition = $13,500.

Enroute PCS Travel:

$0.15 per miles for employee

$0.02 per mile for dependents

(Total not to exceed $0.20 per mile)

In this example ($0.15 + ($0.02 x 3 dependents) = $.20 x 1,200 miles = $240.00

Enroute per diem:

Four days of travel time at $66 per day for employee, $49.50 per day for each dependent 12 years or older, $33.00 per day for each dependent under 12 years old.

Table 5.1. Travel time.

Employee =	$66.00 x 1 x 4 =	264.00
Dependents over 12 =	$49.50 x 2 x 4 =	396.00
Dependents under 12 =	$33.00 x 1 x 4 =	132.00
	Total =	$792.00

Household Goods Transportation:

Assumptions:

1,200 miles at $61.40 per hundred weight (cwt)

Computation:

13,500 pounds

100 = 135 cwt x $61.40 = $8,289.00

Household goods storage:

Not to exceed 90 days.

CWT= 135

1st day: $1.45/CWT x 135 CWT x 1 day=	196.00
Next 89 days: $0.11/CWT x 135 cwt x 89 days=	1,322.00
Warehouse handling: $2.10/cwt x 135 cwt =	284.00
Pickup and delivery: $8.35/cwt x 135 cwt =	1,127.00
Total Household goods storage	$2,929.00

Miscellaneous Expense Allowance:

Maximum allowed for married employee.

Examples are reimbursements for license plates, deposits, drapes, etc.$700.00

House Hunting Trip:

10 day trip

Per diem at $66.00 per day for employee

Per diem at $49.50 per day for employee spouse

Computation: $66 + $49.50 = $115.50 x 10 days =	1,155.00
Round trip air fare $425 x 2=	850.00
Rent-A-Car ($25.00 x 10) =	250.00
Total	$2,255.00

5.3. Civilian Base Pay: The base pay factor is the average pay and average grade of civilian personnel involved full time by major activities within the Air Materiel Command. Major activities include support organization personnel, all Air Logistics Center operations, including the Air Base Group.

5.3.1. Average base pay is computed using base pay scales for the latest year available. The pay scales used are the average of the general schedule (GS), wage grade (WG), wage leader (WL) or wage supervisor (WS) for the specific Air Logistics Center (Depot). The average grade levels differ among the Air Logistics Centers. The base pay scale will differ among the Air Logistics Centers because of the 1994 Percentage Salary Adjustments by Geographic Locality.

5.3.2.The pay scales are not published in this pamphlet.

5.3.3.The average pay grades and average base pay rates may be obtained from the Advanced Personnel Data System-Civilian (APDS-C), E300. The OPR is HQ AFMC/DPCC, Wright-Patterson AFB, Ohio 45433. The prescribing directive is AFR 40-312.

5.4. Personnel Benefits Factors. The base pay for government civilian workers does not include allowances and services, or so-called fringe benefits provided to the workers. The following are the standard benefit to be added to the basic hourly rate (and annual rate of pay).

The U.S. Office of Personnel Management uses a factor of 2,087 hours to measure a work year.

The U.S. Office of Personnel Management uses a factor of 18 percent, added to the annual basic hourly rate to reflect the amount of annual and sick leave earned, and for holiday and other time off taken.

1. Retirement and disability (CSRS or FERS).
2. Health and Life Insurance.
3. Medicare (Applicable to the first $51,300 of annual base pay.
4. Other Benefits, including work disability, bonuses and awards.

5.5. Severance Pay. Severance pay is due to any qualified civilian employee with at least one year of continuous service who is *involuntarily* separated from civilian service, other than for cause, if the employee is not eligible for an immediate Civil Service or military retirement annuity. The rules on severance pay are also subject to the current congressional actions (so-called "buy-outs") and OPM directives and the policies and directives of the specific federal agency. The AFMC OPR is HQ AFMC/DPCF, Wright-Patterson AFB, Ohio.

5.6. Maintenance Personnel Turnover:

(a). Depot Maintenance Personnel Turnover. This rate is based on the average number of civilian personnel assigned to AFMC depot maintenance functions during a base year and the total depot maintenance personnel losses experienced during that year.

Using 1990 as a base year, the equation is as follows:

1990 Depot Maintenance (Losses) 2,633

(Assigned)37,952 = Turnover rate = .0694

(b). Air Force Base Level Maintenance Personnel Turnover. This rate is based on the average number of enlisted personnel assigned to AFMC base level depot maintenance functions during a base year and the total depot maintenance personnel losses experienced during that Year.

Using 1990 as a base year, the equation is as follows:

1990 Depot Maintenance (Losses) 21,140

(Assigned)118,327 = Turnover rate = .1787

SUMMARY OF COSTS:

Real Estate Disposition/Acquisition	$13,500
PCS240	
Travel Time	792
Household Goods	8,289
Household Goods Storage	2,929
Expense Allowance	700
House hunting	2,255
Total	$28,705

RICHARD T. ECHARDT, SR
Deputy Director, Financial Management & Comptroller